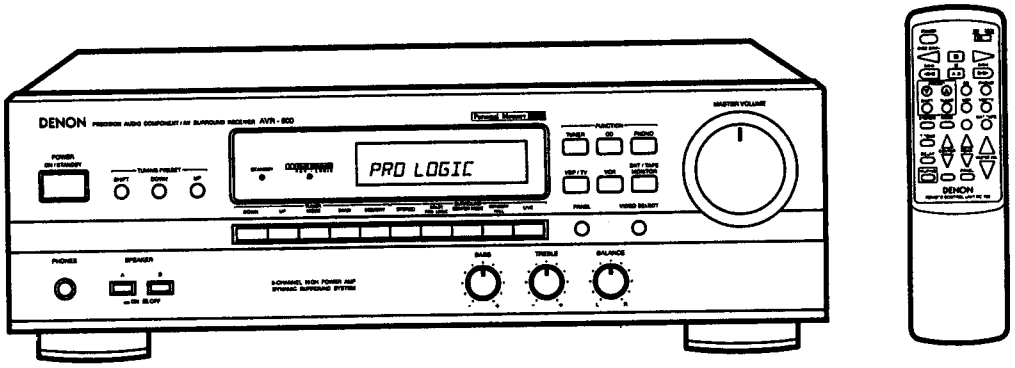
DENON

Hi-Fi AV Surround Receiver

MODEL AVR-900

AV SURROUND RECEIVER



NIPPON COLUMBIA CO., LTD.

• **SAFETY PRECAUTIONS**

CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

• **FOR U.S.A. & CANADA MODEL ONLY**

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE

• **POUR LES MODELE CANADIEN UNIQUEMENT**

ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT

• **安全事項**

CAUTION

RISK OF ELECTRIC SHOCK

DO NOT OPEN

注意：為減少觸電危險，切勿拆下機殼（或機背）。機身內並無用戶修理用零件。請交由專業修理人員修理本機。

三角形內有箭頭的閃電符號旨在提醒用戶，本產品機殼內有未經絕緣的"危險電壓"，其幅度足以使人觸電而發生危險。

三角形內加感嘆號符旨在提醒用戶，有重要的操作與維修說明書配合本機。

警告：為減少着火或觸電危險，切勿讓本機受雨淋濕或受潮。

SAFETY INSTRUCTIONS

1. Read Instructions – All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions – The safety and operating instructions should be retained for future reference.
3. Heed Warnings – All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions – All operating and use instructions should be followed.
5. Water and Moisture – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands – The appliance should be used only with a cart or stand that is recommended by the manufacturer.

6A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting – The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
9. Heat – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization – Precautions should be taken so that the grounding or polarization means of an appliance is not defeated.

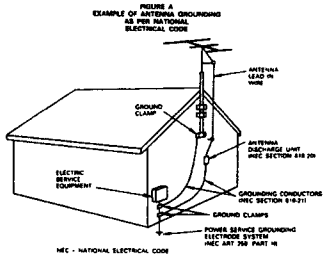


FIGURE A
EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE
ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
GROUNDING CONDUCTORS (NEC SECTION 810-21)
ELECTRIC SERVICE EQUIPMENT
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250 PART H)
NEC - NATIONAL ELECTRICAL CODE

12. Power-Cord Protection – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
14. Cleaning – The appliance should be cleaned only as recommended by the manufacturer.
15. Power Lines – An outdoor antenna should be located away from power lines.
16. Outdoor Antenna Grounding – If an outside antenna is connected to the receiver, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna-discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Figure A.
17. Nonuse Periods – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
18. Object and Liquid Entry – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
19. Damage Requiring Service – The appliance should be serviced by qualified service personnel when:
    A. The power-supply cord or the plug has been damaged; or
    B. Objects have fallen, or liquid has been spilled into the appliance; or
    C. The appliance has been exposed to rain; or
    D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
    E. The appliance has been dropped, or the enclosure damaged.
20. Servicing – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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• ACCESSORIES

Check that the following parts are included in addition to the main unit:

① Operating instructions	1	② Warranty (for North American model only)						1
③ Remote control unit (RC-195)	1	④ R6P / AA batteries	2	⑤ AM loop antenna	1	⑥ FM indoor antenna	1	

• ACCESSOIRES

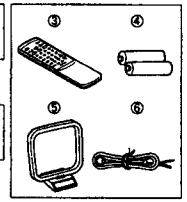
Vérifier que les articles suivants sont inclus dans le carton en plus de l'unité principale:

① Mode d'emploi	1	② Garantie (uniquement pour modèle nord-américain)						1
③ Télécommande (RC-195)	1	④ Piles R6P / AA	2	⑤ Antenne-cadre AM	1	⑥ Antenne intérieure FM	1	

• 附件

下列附件是隨主機附送

① 操作說明書 ..... 1 ② 保用証(只限北美機型) 1
③ 遙控器(RC-195) ..... 1 ④ R6P/AA電池 ..... 2 ⑤ AM環形天線 ..... 1 ⑥ FM室內天線 1

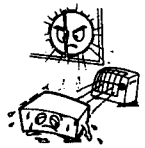


■ We greatly appreciate your purchase of the AVR-900.
■ To be sure you take maximum advantage of all the features the AVR-900 has to offer, read these instructions carefully and use the set properly. Be sure to keep this manual for future reference should any questions or problems arise.

"SERIAL NO. _____
PLEASE RECORD UNIT SERIAL NUMBER ATTACHED TO THE REAR OF THE CABINET FOR FUTURE REFERENCE"

1 INTRODUCTION

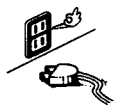
• NOTE ON USE



• Avoid high temperatures
Allow for sufficient heat dispersion when installed on a rack.

• Keep the set free from moisture, water, and dust.

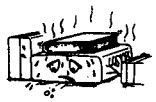
• Do not let foreign objects in the set.



• Unplug the power cord when not using the set for long periods of time.

• Do not let insecticides, benzene, and thinner come in contact with the set.

• Handle the power cord carefully.
Hold the plug when unplugging the cord.



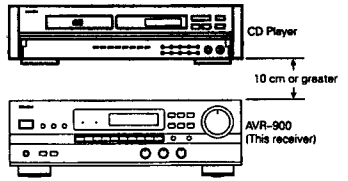
*(For sets with ventilation holes)
• Do not obstruct the ventilation holes.

• Never disassemble or modify the set in any way.

• INSTALLATION PRECAUTIONS

Using this receiver or other electronic equipment containing microprocessors simultaneously with a tuner or TV may result in noise in the sound or picture.
If this should happen, take the following steps:
• Install the receiver as far as possible from the tuner or TV-set.
• Keep the antenna lines of the tuner or TV as far as possible from the receiver's power cord and connection cables.
• This problem is especially frequent when using indoor antennas. We recommend using outdoor antennas and 75 Ω/ohms coaxial cables.

A note on stacking



For cooling purposes, do not place another AV component directly on top of the receiver. Be sure to leave a space of at least 10 cm.

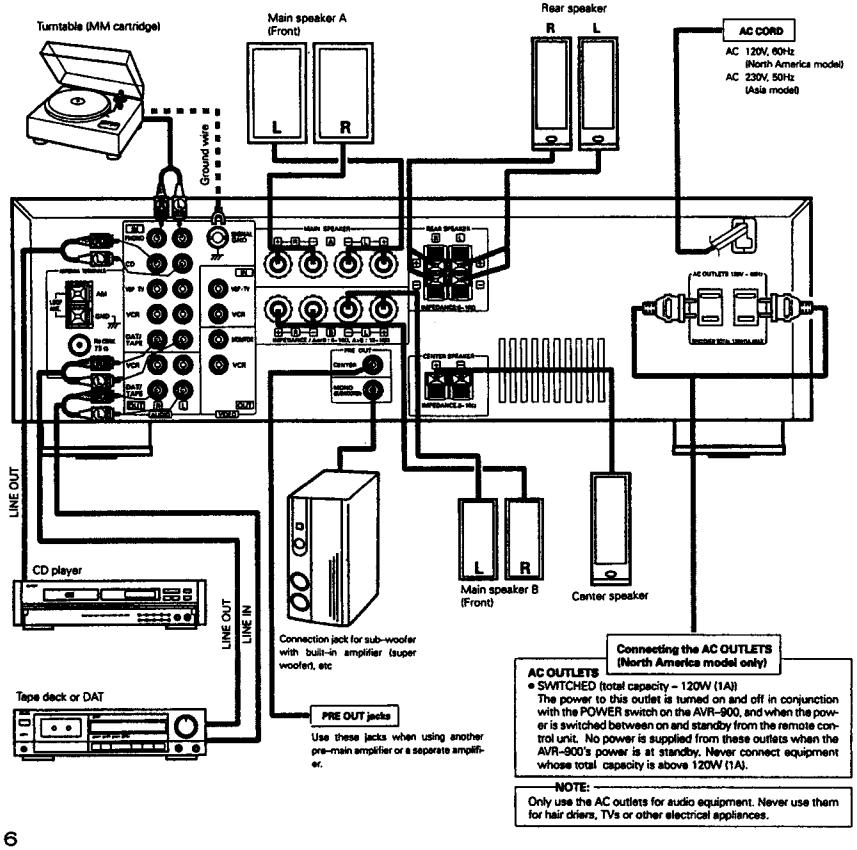
2 CONNECTIONS

- Do not plug in the power cord until all connections have been completed.
- Be sure to connect the left and right channels properly (left with left, right with right).
- Insert the plugs securely. Incomplete connections will result in the generation of noise.
- **Use the AC OUTLETS for audio equipment only. Do not use them for hair driers, etc.**
- Note that binding pin plug cords together with power cords or placing them near a power transformer will result in the introduction of hum or other noise.
- If hum or other noise is produced when the ground wire is connected, disconnect it.
- Noise or humming may be generated if a connected component is used independently without turning the power of the AVR-900 on. If this happens, turn on the power of the AVR-900.

2-1 Connecting the audio components

NOTE:
The receiver cannot be used with MC cartridges directly. Use a separate head amplifier or step-up transformer

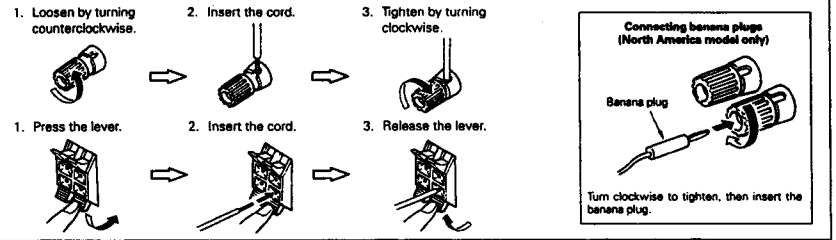
• Precautions when connecting speakers
If a speaker is placed near a TV or video monitor, the colors on the screen may be disturbed by the speaker's magnetism. If this should happen, move the speaker away to a position where it does not have this effect.


Turntable (MM cartridge)
Main speaker A (Front)
Rear speaker
R
L
AC CORD
AC 120V, 60Hz (North America model)
AC 230V, 50Hz (Asia model)
Ground wire
LINE OUT
CD player
LINE OUT
LINE IN
Tape deck or DAT
Connection jack for sub-woofer with built-in amplifier (super woofer), etc
Main speaker B (Front)
Center speaker
PRE OUT jacks
Use these jacks when using another pre-main amplifier or a separate amplifier.
Connecting the AC OUTLETS (North America model only)
AC OUTLETS
• SWITCHED (total capacity – 120W (1A))
The power to this outlet is turned on and off in conjunction with the POWER switch on the AVR-900, and when the power is switched between on and standby from the remote control unit. No power is supplied from these outlets when the AVR-900's power is at standby. Never connect equipment whose total capacity is above 120W (1A).
NOTE:
Only use the AC outlets for audio equipment. Never use them for hair driers, TVs or other electrical appliances.

2-2 Speaker System Connections

- This receiver can accommodate connections of a total of seven speakers including two set of (front) main amplifier speakers (A and B), one set of rear speakers, and one center speaker.
- Connect the speaker terminals with the speakers making sure that like polarities are matched (⊕ with ⊕, ⊖ with ⊖). Mismatching of polarities will result in weak central sound, unclear orientation of the various instruments, and the sense of direc-tion of the stereo being impaired.
- When making connections, take care that none of the individual conductors of the speaker cord come in contact with adjacent terminals, with other speaker cord conductors, or with the rear panel.
- **Speaker Impedance**
  - When speaker systems A and B are use separately, speakers with an impedance of from 6 to 16 Ω/ohms can be connected.
  - Be careful when using two pairs of in speakers (A + B) at the same time, since use of speakers with an impedance outside the range of 12 to 16 Ω/ohms will lead to damage.
  - Speakers with an impedance of 8 to 12 Ω/ohms can be connected for use as center and rear speakers.
  - The protection circuit may operate or damage may occur when speakers with an impedance outside of the above range are used.

Connecting the speaker terminals

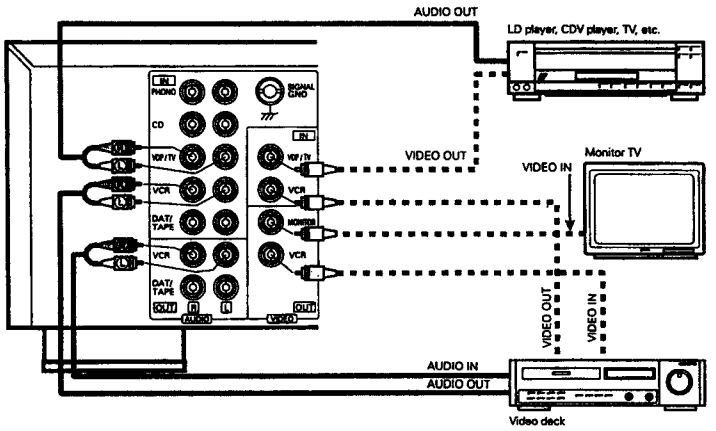

1. Loosen by turning counterclockwise.
2. Insert the cord.
3. Tighten by turning clockwise.
1. Press the lever.
2. Insert the cord.
3. Release the lever.

Connecting banana plugs (North America model only)

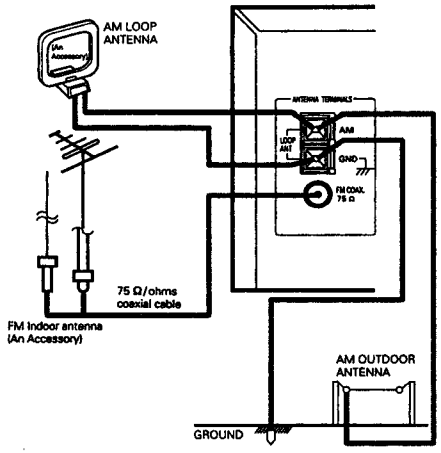
Turn clockwise to tighten, then insert the banana plug.

2-3 Connecting the video components

To connect the video signal, connect using a 75 Ω/ohms video signal cable cord. Using an improper cable can result in a drop in sound quality.



2–4 Connecting the antenna terminals



ANTENNA INSTALLATION

- **FM ANTENNA**

The supplied FM antenna can be used inside wooden houses for receiving local FM stations and other strong FM signals. Stretch out the ends of the antenna and mount the antenna on the wall or ceiling where optimum reception is achieved. A indoor FM antennas may not consistently ensure stable reception, due to environment changes. In such cases, the indoor FM antenna should only be used temporarily until an outdoor FM antenna has been installed.
When connecting an outdoor FM antenna, the use of 75 Ω/ohms coaxial cable (3C–2V, 5C–2V) is strongly recommended.

- **AM ANTENNA**

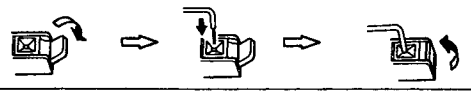
Attach the supplied AM loop antenna even when using an outdoor AM antenna.
Connect the leads to the AM and GND terminals.
Also use the AM terminals for connecting an outdoor AM antenna (when making such a connection do not disconnect the AM loop antenna.)
Adjust the loop antenna to obtain optimum reception. Where broadcast stations are distant and only weak signals are received, or where signals are blocked, it is best to install an outdoor AM antenna.

NOTES

- This receiver has a full back-up system. When the power is turned on, the INPUT SELECTOR buttons are set to the last mode set before the power was turned off.
- When using this receiver in close proximity to video equipment (TV, VCR, VDP, etc.), noise may be generated in AM broadcasts. To avoid this, keep the receiver as far away from other video components as possible, or detach the AM loop antenna from the antenna holder and place it where noise is reduced. If the noise is not reduced, turn off the power of the video components when listening to AM broadcasts.

Connection of AM antennas

1. Push the lever.
2. Insert the conductor.
3. Return the lever.

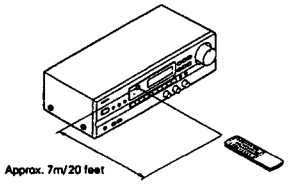


Note to CATV system installer:
This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC which provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

3 REMOTE CONTROL UNIT

Following the procedure outlined below, insert the batteries before using the remote control unit.

■ Range of operation of the remote control unit



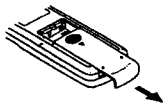
Point the remote control unit at the remote control sensor as shown on the diagram at the left.

NOTES:

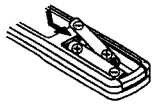
- The remote control unit can be used from a straight distance of approximately 7 meters/20 feet, but this distance will shorten or operation will become difficult if there are obstacles between the remote control unit and the remote control sensor, if the remote control sensor is exposed to direct sunlight or other strong light, or if operated from an angle.
- Neon signs or other devices emitting pulse-type noise nearby may result in malfunction, so keep the set as far away from such devices as possible.

■ Inserting the batteries

1. Open the bottom cover of the remote control unit and remove the battery cover.



2. Insert the two R6P/AA batteries, matching the ⊕ and ⊖ marks on the batteries with those in the case.



3. Close the bottom cover until it clicks shut.

NOTES

- Use only AA, R6P, UM-3 batteries for replacement.
- Be sure the polarities are correct. (See the illustration inside the battery compartment.)
- Remove the batteries if the remote control transmitter will not be used for an extended period of time.
- If batteries leak, dispose of them immediately. Avoid touching the leaked material or letting it come in contact with clothing, etc. Clean the battery compartment thoroughly before installing new batteries.
- Have replacement batteries on hand so that the old batteries can be replaced as quickly as possible when the time comes.

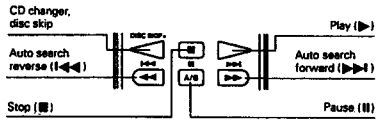
■ System code buttons

DENON remote-controllable audio components can be controlled using this unit's remote control unit.
Note that some components, however, cannot be operated with this remote control unit.

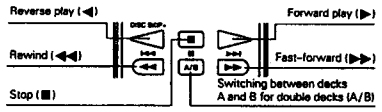
1. Set the slide switch to the position for the component to be operated (CD or DECK).

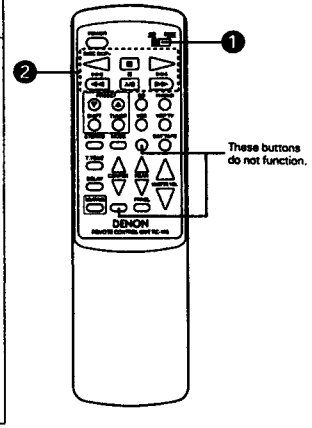
2. Use the buttons shown below to operate the component.
For details, refer to the respective component's manual.

a. For CD players



b. For tape decks





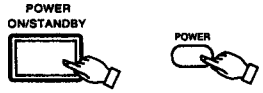
4 OPERATIONS

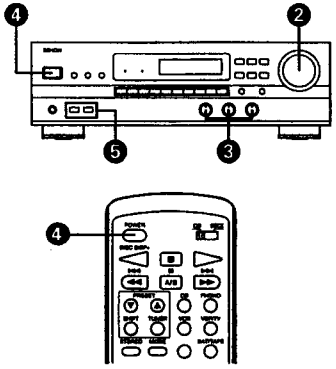
4–1 Preparations for Play Back

❶ Check that all connectionsed are proper.
❷ Set to the minimum position.

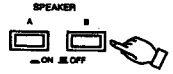
❸ Set to the center position.

❹ Press the power button to turn the power on.



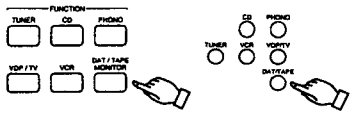


❺ Select the front speakers.
Press the speaker A or B switch to turn the speaker on.

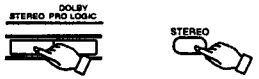


4-2 Playing the program source (Stereo play back)

❶ Select the source to be played.



❷ Select the STEREO mode.



❸ Adjust the MASTER VOLUME control.

❹ Adjust the front left/right BALANCE.
Turn the control counterclockwise to reduce the volume of the right channel, clockwise to reduce the volume of the left channel

4-3 Simulcast playback

Use this switch to monitor a video source other than the audio source.

❶ Press and hold the VIDEO SELECT button until the desired source appears on the display.

VDP/TV
↓
VCR
The source switches as shown above.

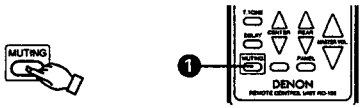
※ Cancelling simulcast playback
- Press the VIDEO SELECT button once more.
- Select the VIDEO function.

4-4 Using the muting function

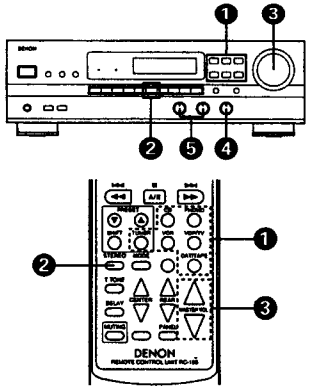
Use this to turn off the audio output temporarily.

❶ Press the MUTING button.

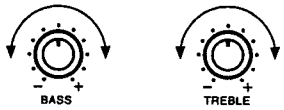
※ Cancelling MUTING mode.
Press the MUTING button again.



This function can only be set from the remote control unit.
The STANDBY LED flashes when the muting function is set.

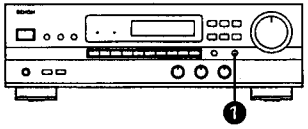


❺ Adjust the BASS and TREBLE.



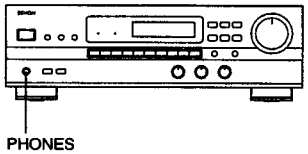
Turn the control clockwise to increase the bass, counterclockwise to decrease it.

Turn the control clockwise to increase the treble, counterclockwise to decrease it.



4-5 Listen with headphones

Connect the headphones to the PHONES jacks.
When listening with headphones privately, set A, B SPEAKER switches and the superwoofer's power switch to the OFF position and set the stereo surround mode.



4-6 Recording the program source

(recording the source currently being monitored)

❶ Follow steps 1 to 3 under "Playing the program source".

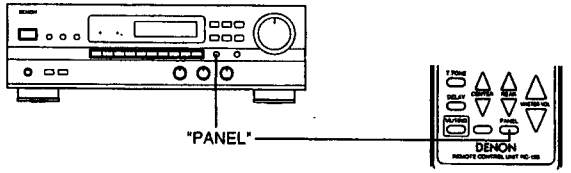
❷ Start recording on the tape or video deck.
For instructions, refer to the component's operating instructions.

Simultaneous recording

The signals of the source selected with the function selector button are output simultaneously to the DAT/TAPE and VCR REC OUT jacks. If a total of two tape and/or video decks are connected and set to the recording mode, the same source can be recorded simultaneously on both decks.
In addition, if the TAPE MONITOR (DAT/TAPE) button is pressed, the audio signals from the tape deck are output to the VCR AUDIO REC OUT jacks.

4-7 Front panel display

Descriptions of the unit's operations are also displayed on the front panel display. In addition, the display can be switched to check the unit's operating status while playing a source by pressing the PANEL button



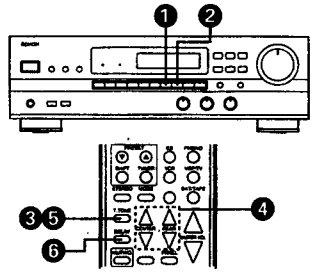
4-8 Using the surround function

Types of surround modes and their characteristics

1	Dolby Pro Logic	Use this when playing program sources recorded in Dolby Surround or Dolby stereo.
2	CONCERT HALL	Use this setting to create the atmosphere of a concert hall. There will be no output from the center speaker
3	LIVE	Use this setting to create the atmosphere of watching a live performance. There will be no output from the center speaker.

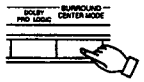
• Before using the surround function

Make the following adjustments before using the surround function.



❶ Set the Dolby Pro Logic mode

❷ Select the center mode.
Select the center mode according to the center speaker.



NORMAL → PHANTOM → WIDE
The mode changes as shown above.

❸ Emit the test tone.

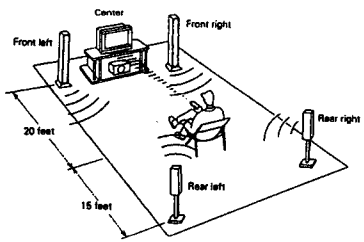
Test tones are produced from the speakers in the order shown below, at 4 second intervals for the first two cycles, 2 second intervals after that.

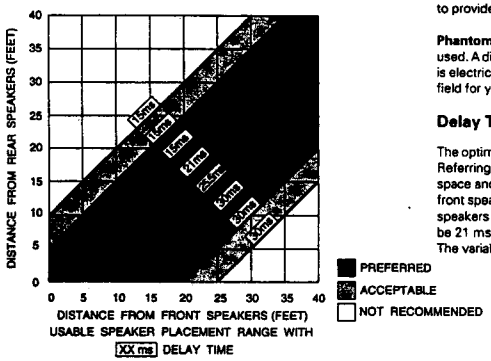
FL → C → FR → S

❹ Adjust the center and rear levels to set the volume of the speakers to the same level.

❺ Turn the test tone off.

❻ Adjust the delay time and seating position as necessary.





Center Mode

Set the center mode as described below, according to the type of center speaker being used.

Normal mode: This mode is suited for an arrangement in which the center channel speaker is smaller than the left and right speakers. Signals below 100 Hz which have almost no effect on directional orientation are distributed to the left and right channels, whereas the center channel output signals greater than 100 Hz. As a result, the bass of the left and right channels increases the apparent deepness of the sound.

Wide mode: This mode is suited for an arrangement in which the center channel speaker is of the same grade as the left and right speakers. The entire sound band from low region to high is output to the center channel to provide an exciting sound field for your enjoyment.

Phantom mode: Use this mode when center channel speaker is not used. A directional emphasis circuit provides signal reproduction which is electrically oriented to the center and this provides an exciting sound field for your enjoyment.

Delay Time

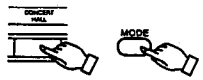
The optimum delay time will differ depending on the listening position. Referring to the chart at left, set the optimum delay time for your room's space and seating position. For example, when the distance from the front speakers to the listening position is 20 feet and that from the rear speakers to the listening position is 15 feet, the optimum delay time will be 21 ms.
The variable range of the delay time differs depending on the mode.

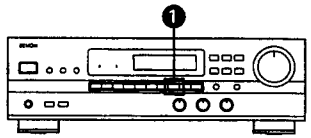
Personal Memory Plus function .... for EASY TO USE

The AVR-900 automatically stores the surround mode adding effects for all input sources. The corresponding surround mode is recalled automatically each time an input source is selected.

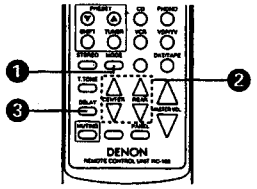
• Using the surround function

❶ Select the surround mode according to the input source.





❷ If necessary, adjust the levels.



❸ Adjust the parameters to the desired settings.

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Operating Possible in the Various Surround Modes

The following is a list of the buttons and functions which can be operated during the different surround modes. Figures in parentheses indicate adjustment ranges.

		OUTPUT	CENTER LEVEL	REAR LEVEL	CENTER MODE	TEST TONE	DELAY TIME
DOLBY PRO LOGIC	NORMAL	O	O (0 ~ −24dB)	O (0 ~ −24dB)	O	O	O (15 ~ 30ms)
	PHANTOM	O	×	O (0 ~ −24dB)	O	O	O (15 ~ 30ms)
	WIDE	O	O (0 ~ −24dB)	O (0 ~ −24dB)	O	O	O (15 ~ 30ms)
CONCERT HALL		O	×	O (0 ~ −24dB)	Δ*1	×	O (0 ~ 33ms)
LIVE		O	×	O (0 ~ −24dB)	Δ*1	×	O (0 ~ 33ms)

O: Operation possible ×: Operation not possible

*1 Switches to the Dolby Pro Logic from any modes other than Dolby Pro Logic.
The level of the center and rear channels can be adjusted by 2 dB step.
The delay time can be set by 1.5 ms step.

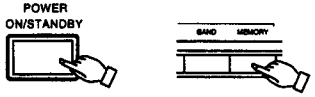
- **The sound may be distorted for some sources if the rear level is raised during surround playback. If this happens, lower the rear level.**

5 LISTENING TO THE RADIO

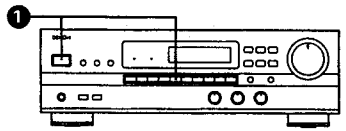
5-1 Auto preset memory

This unit is equipped with a function for automatically searching for FM broadcast stations and storing them in the preset memory.

❶ Press the POWER button while holding in the MEMORY button. The unit automatically begins searching for FM broadcast stations.



❷ When the first FM broadcast station is found, that station is stored in the preset memory at channel A1. Subsequent stations are automatically stored in order at preset channels A2 to A8, B1 to B8, C1 to C8, D1 to D8 and E1 to E8, for a maximum of 40 stations.



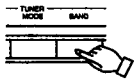
❸ Channel A1 is tuned in after the auto preset memory operation is completed.

NOTES:
- If an FM station cannot be preset automatically due to poor reception, use the "Manual tuning" operation to tune in the station, then preset it using the manual "Preset memory" operation.
- RDS stations are stored in the memory with priority.
- To interrupt this function, press the POWER button.

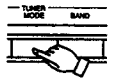
5-2 Auto tuning

❶ Set the input function to "TUNER".

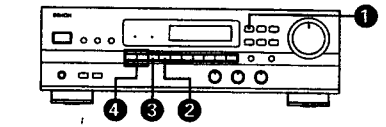
❷ Watching the display, press the BAND button to select the desired band (AM or FM).



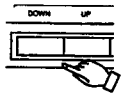
❸ Press the MODE button to set the auto tuning mode.



"AUTO" appears on the display.



❹ Press the TUNING UP or DOWN button.



Automatic searching begins, then stops when a station is tuned in.

If tuning does not stop at the desired station, use to the "Manual tuning" operation.

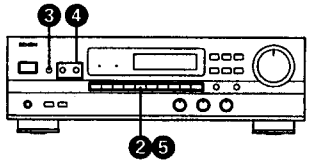
5-3 Manual tuning

❶ Set the input function to "TUNER".
❷ Watching the display, press the BAND button to select the desired band (AM or FM).
❸ Press the MODE button to set the manual tuning mode.
Check that the display's "AUTO" indicator turns off.
❹ Press the TUNING UP or DOWN button to tune in the desired station.
The frequency changes continuously when the button is held in.

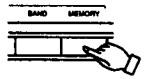
NOTES:
- When in the auto tuning mode on the FM band, the "STEREO" indicator lights on the display when a stereo broadcast is tuned in. At open frequencies, the noise is muted and the "TUNED" and "STEREO" indicators turn off.
- When the manual tuning mode is set, FM stereo broadcasts are received in monaural and the "STEREO" indicator turns off.

5-4 Preset memory

❶ Use the "Auto tuning" or "Manual tuning" operation to tune in the station to be preset in the memory.

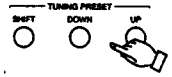


❷ Press the MEMORY button.

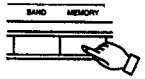


❸ Press the SHIFT button and select the desired memory block (A to E).

❹ Press the PRESET UP or DOWN button to select the desired preset channel (1 to 8).



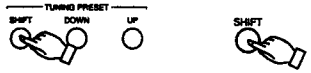
❺ Press the MEMORY button again to store the station in the preset memory.



To preset other channels, repeat steps ❸ to ❺.
A total of 40 broadcast stations can be preset — 8 stations (channels 1 to 8) in each of blocks A to E.

5-5 Recalling preset stations

❶ Watching the display, press the SHIFT button to select the preset memory block.

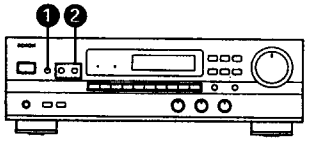


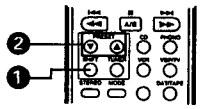
❷ Watching the display, press the PRESET UP or DOWN button to select the desired preset channel.

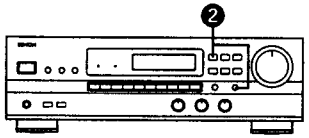
6 INITIALIZATION OF THE MICROPROCESSOR

When the indication of the MFD display is not normal or when the operation of the unit does not shows the reasonable result, the initialization of the microprocessor is required by the following procedure.

1. Switch off the unit and remove the AC power cord from the wall outlet.
2. Hold the following TUNER button and VIDEO SELECT button, and plug the power cord into the outlet.
3. Check that the entire display is flashing with an interval of about 1 second, and release your fingers from the 2 buttons.
4. Switch on the unit and the microprocessor will be initialized.







7 LAST FUNCTION MEMORY

- This receiver is equipped with a last function memory which stores the input and output setting conditions as they were immediately before the power is switched off.
  This function eliminates the need to perform complicated resettings when the power is switched on.
- This receiver is also equipped with a back-up memory. This function provides approximately one week of memory storage with the power cord disconnected.

8 TROUBLESHOOTING

If a problem should arise, first check the following:
1. Are the connections correct?
2. Have you operated the amplifier according to the Operating Instructions?
3. Are the speakers, turntable, and other components operating properly?
If the receiver is not operating properly, check the items listed in the table below. Should the problem persist, there may be a malfunction. Disconnect the power immediately and contact your store of purchase.

	Symptom	Cause	Measures	Page
Common problems arising when listening to the CD, records, tapes, and FM broadcasts, etc.	DISPLAY not lit and sound not produced when power switch set to on.	• Power cord not plugged in securely.	• Check the insertion of the power cord plug.	6
	DISPLAY lit but sound not produced.	• Speaker cords not securely connected. • Speaker switch is off. • Improper position of the audio function button. • Volume control set to minimum. • MUTING is on.	• Connect securely. • Turn on speaker switch. • Set to a suitable position. • Turn volume up to suitable level. • Switch off MUTING.	6, 7 9 10 9 10
	-PROTECT- display appears.	• Speaker terminals are short-circuited. • Block the ventilation holes of the set • The unit is operating at continuous high power conditions and/or inadequate ventilation.	• Switch power off, connect speakers properly, then switch power back on. • Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on. • Turn off the set's power, then ventilate it well to cool it down. Once the set is cooled down, turn the power back on.	6, 7 — —
	Sound produced only from one channel.	• Incomplete connection of speaker cords. • Incomplete connection of input/output cords • Left/right balance is off.	• Connect securely. • Connect securely. • Adjust balance knob properly.	6, 7 6, 7 9
	Positions of instruments reversed during stereo playback.	• Reverse connections of left and right speakers or left and right input/output cords.	• Check left and right connections.	6, 7
	Sound seems distorted.	• Rear level is too high.	• Set the rear level to lower level.	11, 12
When playing records	Humming noise produced when record is playing.	• Ground wire of turntable not connected properly. • Incomplete PHONO jack connection. • TV or radio transmission antenna nearby.	• Connect securely. • Connect securely. • Contact your store of purchase.	6 6 —
	Howling noise produced when volume is high.	• Turntable and speaker systems too close together. • Floor is unstable and vibrates easily.	• Separate as much as possible. • Use cushions to absorb speaker vibrations transmitted by floor. If turntable is not equipped with insulators, use audio insulators (commonly available).	— —
	Sound is distorted.	• Stylus pressure too weak. • Dust or dirt on stylus. • Cartridge defective.	• Apply proper stylus pressure. • Check stylus. • Replace cartridge.	— — —
	Volume is weak.	• MC cartridge being used.	• Replace with MM cartridge or use a head amplifier or step-up transformer.	6
Remote control unit	Receiver does not operate properly when remote control unit is used.	• Batteries dead. • Remote control unit too far from receiver. • Obstacle between receiver and remote control unit. • Different button is being pressed. • ⊕ and ⊖ ends of battery inserted in reverse.	• Replace with new batteries. • Move closer. • Remove obstacle. • Press the proper button. • Insert batteries properly.	8, 9 8, 9 8, 9 8, 9 8, 9

9 SPECIFICATIONS

- **Audio Section**

(Power amplifier)
Rated output:
(All properties shown are only for the power amplifier stage.)

FRONT (main 2ch driven)
60 W + 60 W (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% THD)
90 W + 90 W (6 Ω/ohms, EIAJ)
CENTER (center 1ch driven)
60 W (8 Ω/ohms, 20 Hz – 20 kHz with 0.08% THD)
90 W (6 Ω/ohms, EIAJ)
REAR (rear 2ch driven)
15 W + 15 W (8 Ω/ohms, 1 kHz with 0.3% THD)
25 W + 25 W (6 Ω/ohms, EIAJ)

Output terminals:
Front: 6 to 16 Ω/ohms (for North America model)
8 to 16 Ω/ohms (for Asia model)
Center: 8 to 16 Ω/ohms
Rear: 8 to 16 Ω/ohms

(Pre-amplifier)
Line input (Each line input – FRONT SP OUT)
Input sensitivity / impedance: 150 mV/47 kΩ/kohms PHONO (MM): 2.5 mV/47 kΩ/kohms
Frequency response: 10 Hz to 50 kHz: ±3 dB
Tone control range: BASS: ±10 dB at 100 Hz
TREBLE: ±10 dB at 10 kHz
Signal-to-noise ratio: 92 dB (STEREO)
Phono equalizer (PHONO input – REC OUT)
RIAA deviation: ±1dB (20 Hz to 20 kHz)
Signal-to-noise ratio: 74 dB (A weighting, with 5 mV input)
Rated output / Maximum output: 150 mV / 8 V
Distortion factor: 0.03% (1 kHz, 1 V)

- **Tuner Section**

	[FM] (note: μV at 75 Ω/ohms, 0 dBf = 1 × 10^{-15} W)	[AM]
Receiving Range:	87.5 MHz ~ 107.9 MHz (for North America model)	520 kHz ~ 1710 kHz (for North America model)
	87.50 MHz ~ 108.00 MHz (for Asia and Taiwan R.O.C. models)	522 kHz ~ 1611 kHz (for Asia and Taiwan R.O.C. models)
Usable Sensitivity:	1.0 μV (11.2 dBf)	18 μV
50 dB Quieting Sensitivity:	MONO 1.6 μV (15.3 dBf)	
	STEREO 23 μV (38.5 dBf)	
Signal to Noise Ratio (IHF-A):	MONO 80 dB	50 dB
	STEREO 75 dB	
Total Harmonic Distortion (at 1 kHz):	MONO 0.15%	
	STEREO 0.3%	

- **Video Section**
Standard video jacks
Input and output level / impedance: 1 Vp-p/75 Ω/ohms
Frequency response: 2 Hz to 8 MHz +0, −3 dB

- **General**
Power supply: AC 120 V, 60 Hz (for North America and Taiwan R.O.C. models)
AC 230 V, 50 Hz (for Asia model)
Power consumption: 4.0 A (for North America model)
200 W (for Asia model)
Maximum external dimensions: 434 (W) × 142 (H) × 303 (D) mm (17-3/32" × 5-19/32" × 11-15/16")
Weight: 7.7 kg (17 lbs)

- **Remote control unit**
System remote control RC-195:

Total buttons:	28
DENON system code	
CD player:	6 buttons } (SWITCHED)
Cassette deck:	6 buttons } (SWITCHED)
AVR-900 fixed codes:	22 buttons
Batteries:	R6P/AA Type (two batteries)
External dimensions:	51 (W) × 175 (H) × 18.5 (D) mm (2" × 6-57/64" × 47/64")
Weight:	100 g (Approx. 3.5 oz) (including batteries)

* For purposes of improvement, specifications and design are subject to change without notice.